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EXAMINER	
COLUCCI, MICHAEL C	
ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/727,886	**Applicant(s)** RAJPUT ET AL.	
	Examiner MICHAEL C. COLUCCI	**Art Unit** 2626	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 23 December 2008 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: _____.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Richemond Dorvil/
Supervisory Patent Examiner, Art Unit 2626

/Michael C Colucci/
Examiner, Art Unit 2626

Continuation of 11. does NOT place the application in condition for allowance because:

Re remarks, Examiner believes that the teachings of Bahl in view of Kantrowitz are within the scope of the present invention relative to natural language understanding, modeling, and next word probability, wherein Bahl appears to be clearly directed to modeling prior word probabilities in order to predict the next word. Examiner believes it is well known in the art. to access previous data to predict future data, wherein said previous data must be stored within some medium for access. Further, a word history is given the broadest meaning and is well known in the art, and construed as simply a record or storage of previous words, such as probabilistic language modeling taught by Bahl (1007 col. 2).

Examiner has incorporated Kantrowitz to address the use of mixed language analysis, wherein Kantrowitz's methods can be easily applied to the teachings of Bahl, wherein a monolingual word history can be generated for use in a mixed language document.

Examiner would also like to point out that both Bahl and Kantrowitz like the present invention both teach merely analyzing individual words for language processing in a document. Additionally, it is necessary that this identification of the language of a word take place, as is understood in claim 1 "determining a probability of a next word in a mixed language expression based upon the monolingual next word hypothesis probabilities and the stored word equivalence probabilities, wherein said probability of said next word predicts a next word in said mixed language expression". For instance, Kantrowitz teaches that "in a mixed-language document, this regular expression can be used to select the appropriate dictionary and thesaurus for use with the word. It can also be used to select the appropriate spelling correction and grammar correction algorithms" (Kantrowitz Col. 6 lines 7-26). Additionally, a word history is functionally equivalent and equally effective to that of a dictionary or thesaurus in one language, wherein various dictionaries can be selected and act as a word history/source. Therefore, it is the combined teaching of Bahl and Kantrowitz that render obvious the creation of prior word data and word prediction based on a mixed language, wherein Kantrowitz demonstrates ample knowledge of processing and understanding of mixed languages that Bahl is lacking. Examiner believes that there is more than sufficient evidence previously cited to address the claims and arguments relative to claims 1 and 8.

Re Remarks [0038], as previously cited, with Bahl teaching a single language modeling and probabilistic word prediction, Kantrowitz is incorporated to address a mixed language, wherein Kantrowitz certainly teaches the handling of a mixed language document in a statistical manner. Like the present invention (Present invention page 7), Kantrowitz teaches a word by word basis approach to statistical analysis. Kantrowitz teaches a method that is different from these systems in that it identifies the language of individual words with very high accuracy, not entire documents. This allows the present invention to operate on a word-by-word basis, correctly identifying the language of words even when the document contains multiple languages (e.g., Canadian parliamentary proceedings contain both English and French) or includes short quotes of one language within a document that is mostly another language. This allows language-specific functionality, such as language-specific spelling correction and transliteration (e.g., ASCII-to-Kanji conversion of Japanese Romaji to Kanji letters) to occur on a word-by-word basis. The language identification statistics for the individual words of a document can be combined to identify the overall language of a document with much higher cumulative accuracy than the state of the art. It can also identify the number of languages present in mixed-language documents, the identity of the language and the relative frequency of occurrence of the language's lexicon (Kantrowitz Col. 2 lines 17-47).

Further, Kantrowitz does not just merely disclose the identification of words in a mixed language document in a standard manner. Kantrowitz teaches the elimination of burdensome user intervention allowing the user to type in English or Romaji as needed, with the system automatically distinguishing between the two and converting the Romaji to Kanji as necessary. In a mixed-language document, this regular expression can be used to select the appropriate dictionary and thesaurus for use with the word. It can also be used to select the appropriate spelling correction and grammar correction algorithms. In computer user interfaces, it can be used to automatically select the language in which the system interacts with the user (e.g., the language of menus and help systems), to identify the source language for machine translation applications without requiring the user to explicitly specify the source language, and to identify the most likely ancestry and/or native language of a person by identifying the language of their name (Kantrowitz Col. 6 lines 7-26).

Kantrowitz teaches that the invention herein goes beyond the state of the art by being able to identify the language of individual words in isolation with high accuracy. The accuracy in identifying the language of individual words typically is equal to that of whole-document language identification systems. When the language identification of individual words is combined for all the words in a document, the overall accuracy significantly exceeds that of whole-document systems. Moreover, the ability to identify the language of individual words permits document processing resources to be applied on a word-by-word basis. For example, it allows for the spelling correction of a mixed-language document, allowing the spelling correction software to select the appropriate language for each word. It also allows the automatic substitution of Kanji for Romaji in mixed Japanese-English documents, without requiring the user to explicitly switch from one language to another (Kantrowitz Col. 6 lines 41-67). The missing element from the scope of the invention is performing the methods taught by Bahl in a mixed language environment, and thus Kantrowitz is introduced to take the teachings of Bahl to the next level performing probabilistic approaches to word prediction in a mixed language environment.

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